



CALTRANS EQUITY INDEX

INFORMATION SESSION #2: BETA UPDATE

March 28, 2023

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DIRECTOR'S OFFICE OF EQUITY, SUSTAINABILITY & TRIBAL AFFAIRS

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

AGENDA

1. Purpose and motivation for the Caltrans Equity Index
2. Alignment with State and Federal Efforts
3. Potential Applications of the Tool
4. Equity Index Overview
 - Methodology
 - Data layers
 - Comparison to other mapping tools
5. Public Engagement Plan



EXCERPT FROM CALTRANS EQUITY STATEMENT

Caltrans recognizes our leadership role and unique responsibility in State government to eliminate barriers **to provide more equitable transportation** for all Californians.

This understanding is the foundation for **intentional decision-making** that **recognizes past, stops current, and prevents future harms** from our actions.



EQI OBJECTIVES

- Identify indicators to account for equity-based outcomes
- Develop data-driven definition for underserved communities
- Assist in the evaluation and prioritization of the department's plans and projects

STATE CONSIDERATIONS

- CAPTI Action S3.4:
 - Identify indicators to account for equity-based outcomes
 - Assist in the evaluation and prioritization of the department's projects
- Reconnecting Communities: Highways to Boulevards Pilot Program (Cal. Sts. & Hy. Code § 104.3)
 - Requires development of data-driven definition for underserved communities



FEDERAL CONSIDERATIONS

- Justice 40: “A commitment to deliver 40 percent of the overall benefits of Federal climate, clean energy, affordable and sustainable housing, clean water, and other investments to disadvantaged communities that are marginalized, underserved, and overburdened by pollution.”

POTENTIAL USE OF THE TOOL

Informational

- Project reviews
- Environmental reviews

Funding allocation

- Discretionary grants
- Program guidelines

Decision-making

- Corridor/area planning
- Project prioritization
- Equity assessment/mitigation
- Performance measurement

BETA EQI APPROACH

- Granularity
- Spatially-significant indicators
 - Some equity issues may not be spatial
- Focus on issues affected by transportation decisions
- Avoid double counting indicators



BETA EQI INDICATORS

Transportation Burdens

- Truck-weighted traffic proximity and volume
- Crash exposure

Transportation Benefits

- Access to work destinations
- Access to nonwork destinations

Demographics

- Household income
- Race/ethnicity

DEMOGRAPHIC OVERLAY

Demographic Indicator

- Household Income

Proposed threshold: $\leq 80\%$ of the statewide median household income OR \leq HCD county low-income threshold (AB 1550)

AND/OR

- Race and Ethnicity Data

Proposed threshold: $\geq 63\%$ non-white (statewide average)

TRAFFIC EXPOSURE

Traffic Exposure Indicators

- Traffic Proximity and Volume

Proposed threshold: \geq 80th percentile for truck-weighted traffic proximity and volume exposure

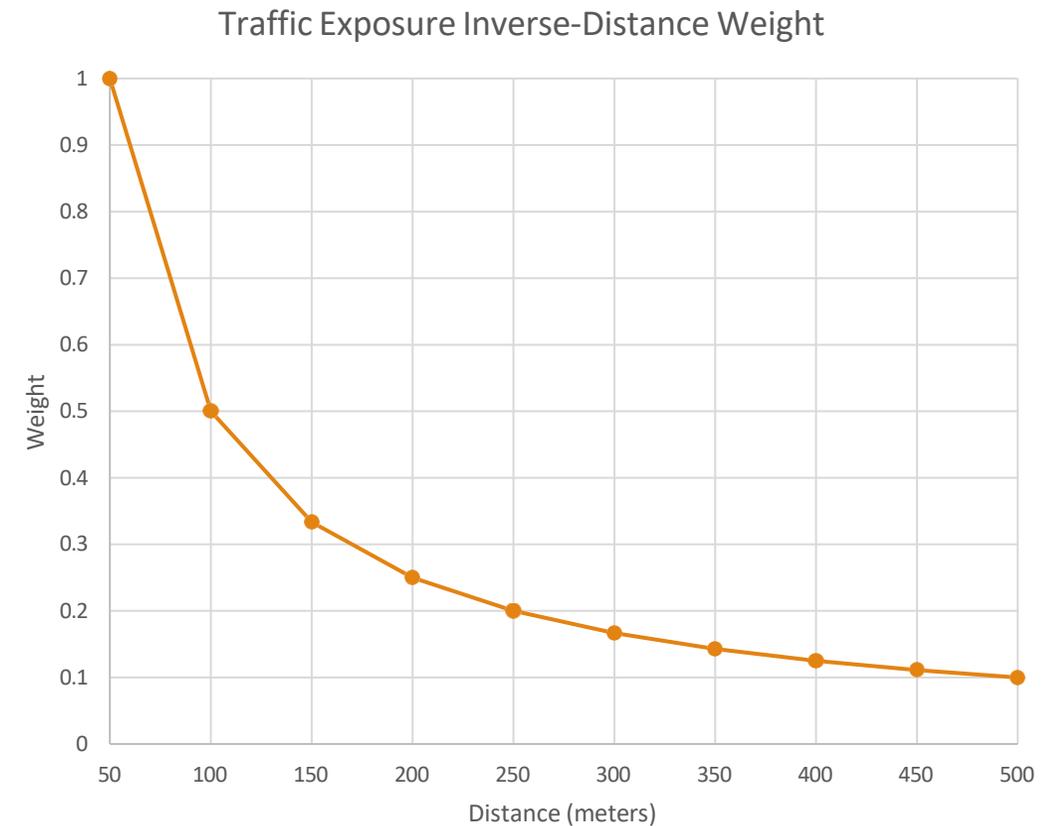
OR

- Crash Exposure Data

Proposed threshold: \geq 80th percentile for weighted crash exposure

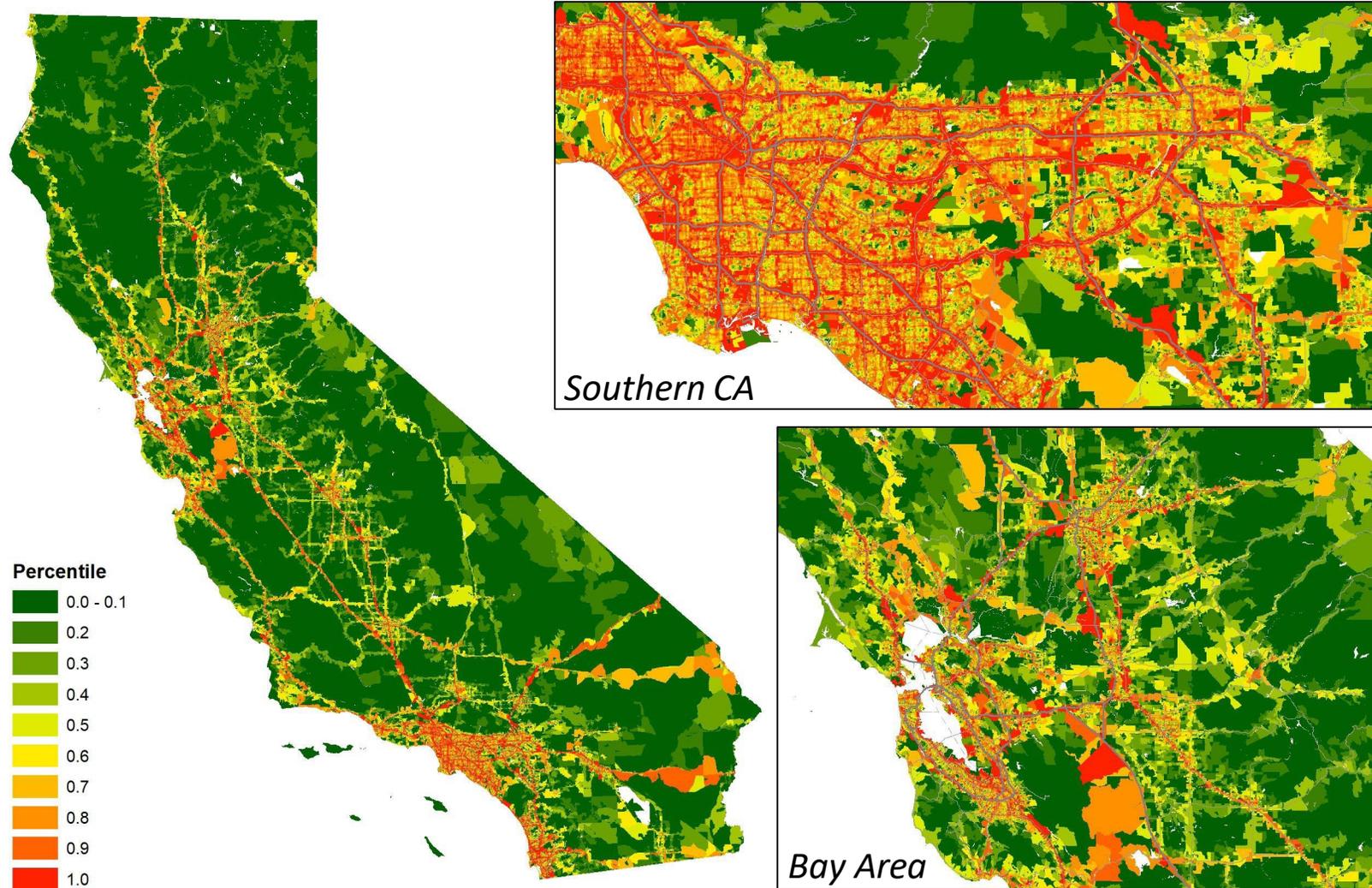
TRAFFIC PROXIMITY AND VOLUME

- Highway Performance Monitoring System (HPMS) input data
- Buffer from centerline and intersect with blocks
- Inverse-distance decay weighting
- Impact measured as truck-weighted Annual Average Daily Traffic (AADT)
- Measures cumulative impact



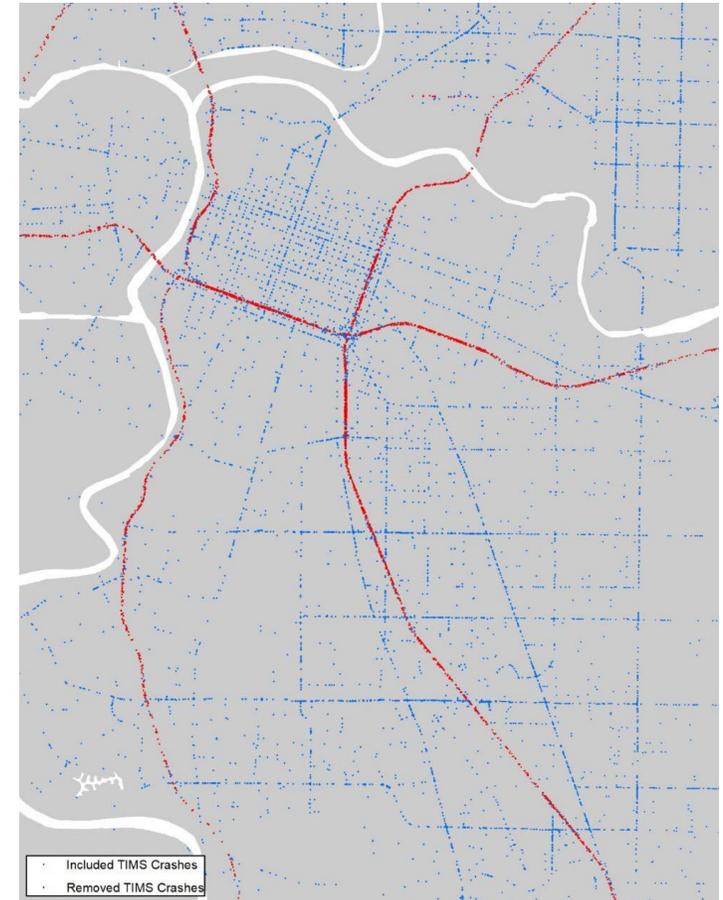
Traffic Exposure

Traffic Proximity and Volume



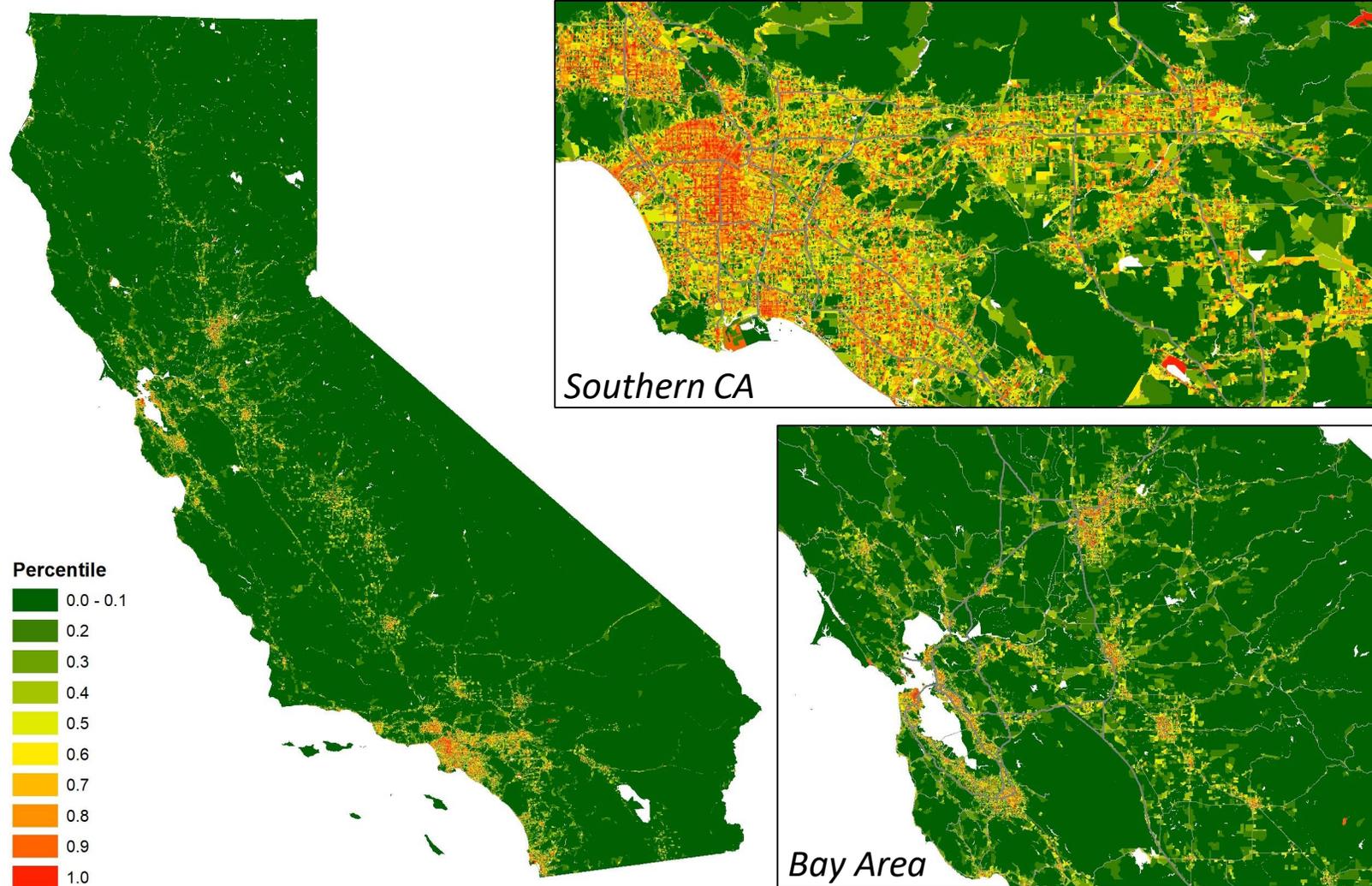
CRASH EXPOSURE

- Transportation Injury Mapping System (TIMS) Input data (derived from SWITRS)
- Crashes on controlled-access facilities removed
- Crashes weighted by severity
- Weighted crashes summed within 250-foot buffer of block
- **Update Since Sept:** Crash Density Metric



Traffic Exposure

Crash Exposure



ACCESS TO DESTINATIONS

Access to Destinations Indicators

- Ratio of multimodal access (transit & walking) to auto access

Proposed threshold: < 0.2 for both work and non-work destinations

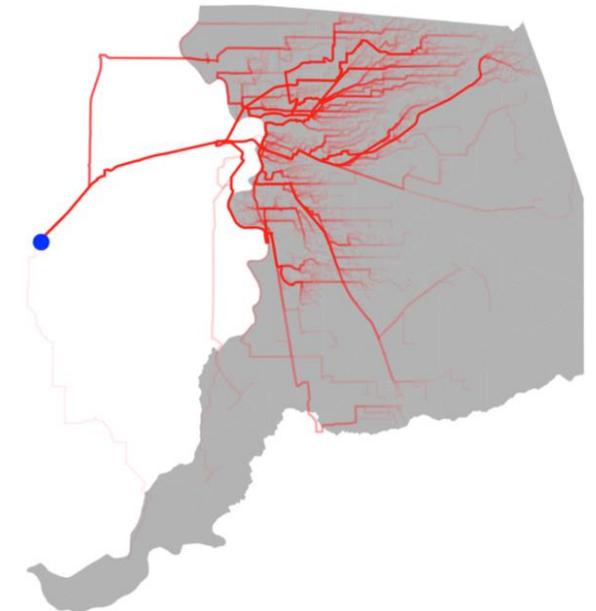
- 'Ideal Access' analysis (still under development)

Will be used to develop screens for bicycle access, accounting for Level of Traffic Stress (LTS) and circuitry barriers

ACCESS TO DESTINATIONS

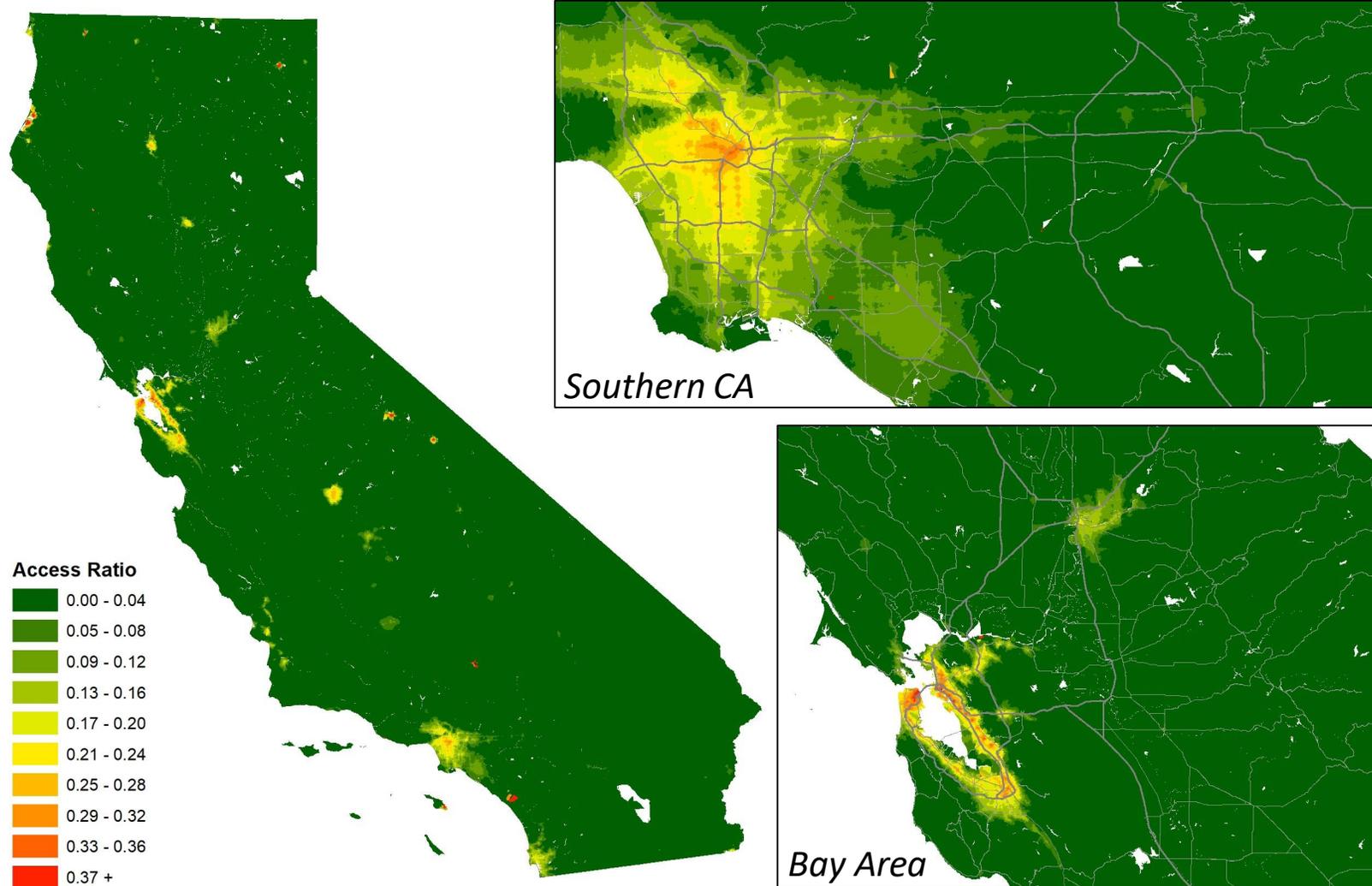
- Access calculated using Open Street Map (OSM) + General Transit Feed Specification (GTFS) networks
- Cumulative opportunities metric used
- Opportunities decay-weighted
- Calculated statewide using 200-meter grid cells
- **Update Since Sept:** Now includes both work and non-work Access to Destinations

$$A_i = \sum_j O_j f(C_{ij})$$



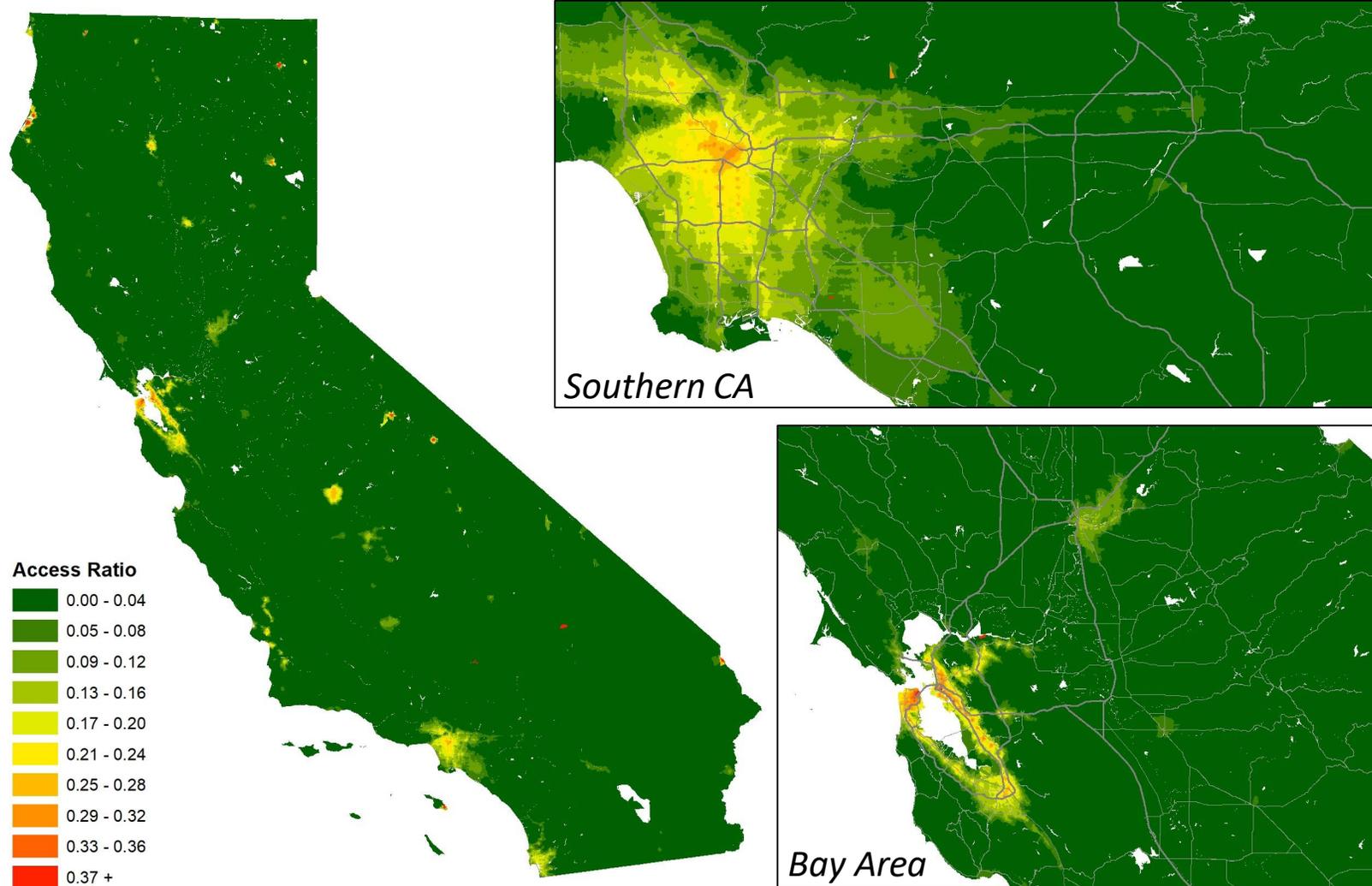
Access to Destinations

Work Access



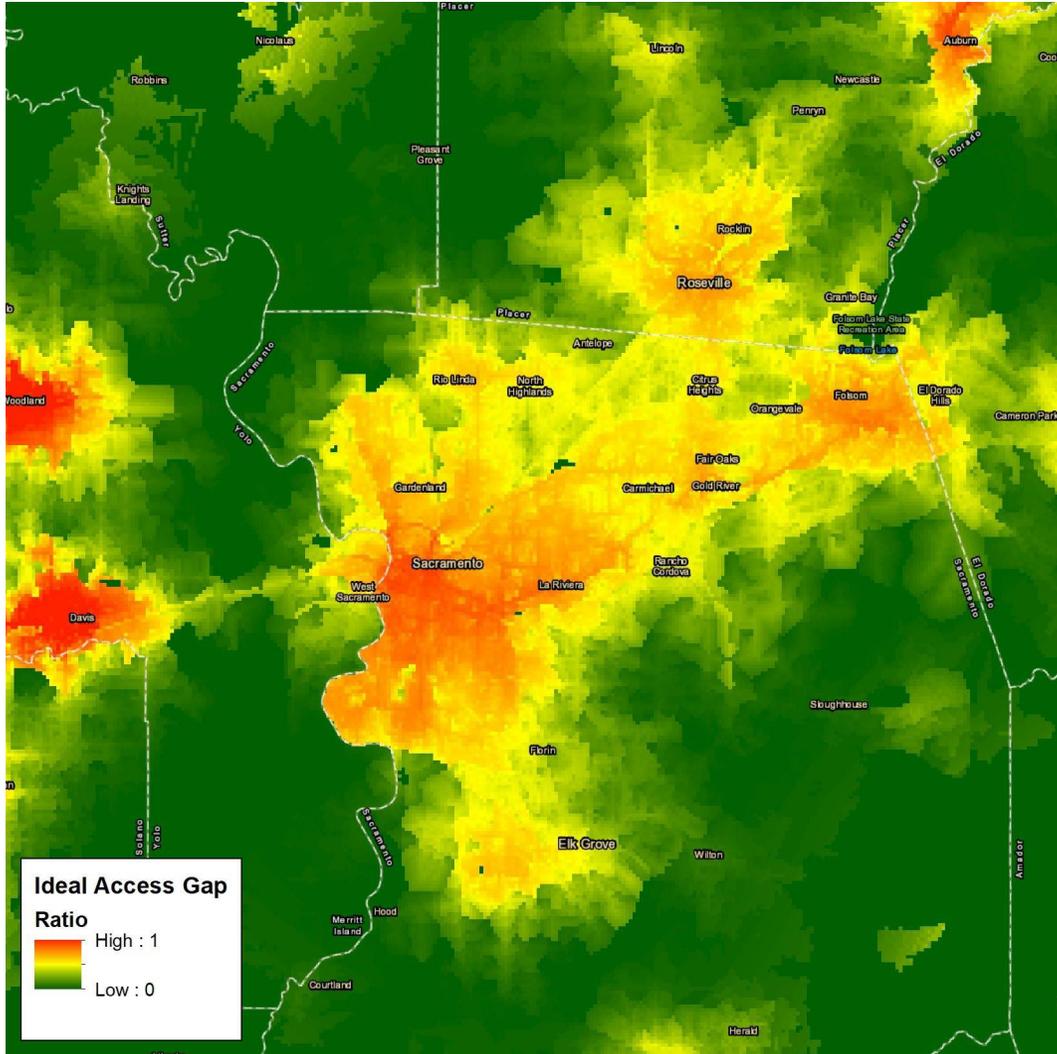
Access to Destinations

Non-Work Access



Access to Destinations

'Ideal Access' metric (under development)



- Designed for use in evaluating bicycle access to destinations
- Compares access with existing network to access under ideal conditions where the network isn't a constraint
- Identifies gaps in the network explainable by both:
 - Level of Traffic Stress (LTS)
 - Circuity

EQI SCREENS

Demographic Overlay

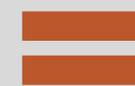
Transportation Indicators

EQI Screens

Demographic
Overlay



Traffic Proximity and Volume
OR Crash Exposure

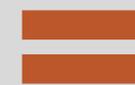


Traffic Exposure
Screen

Demographic
Overlay



Access to Destinations

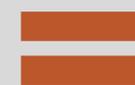


Access to Destinations
Screen

Demographic
Overlay



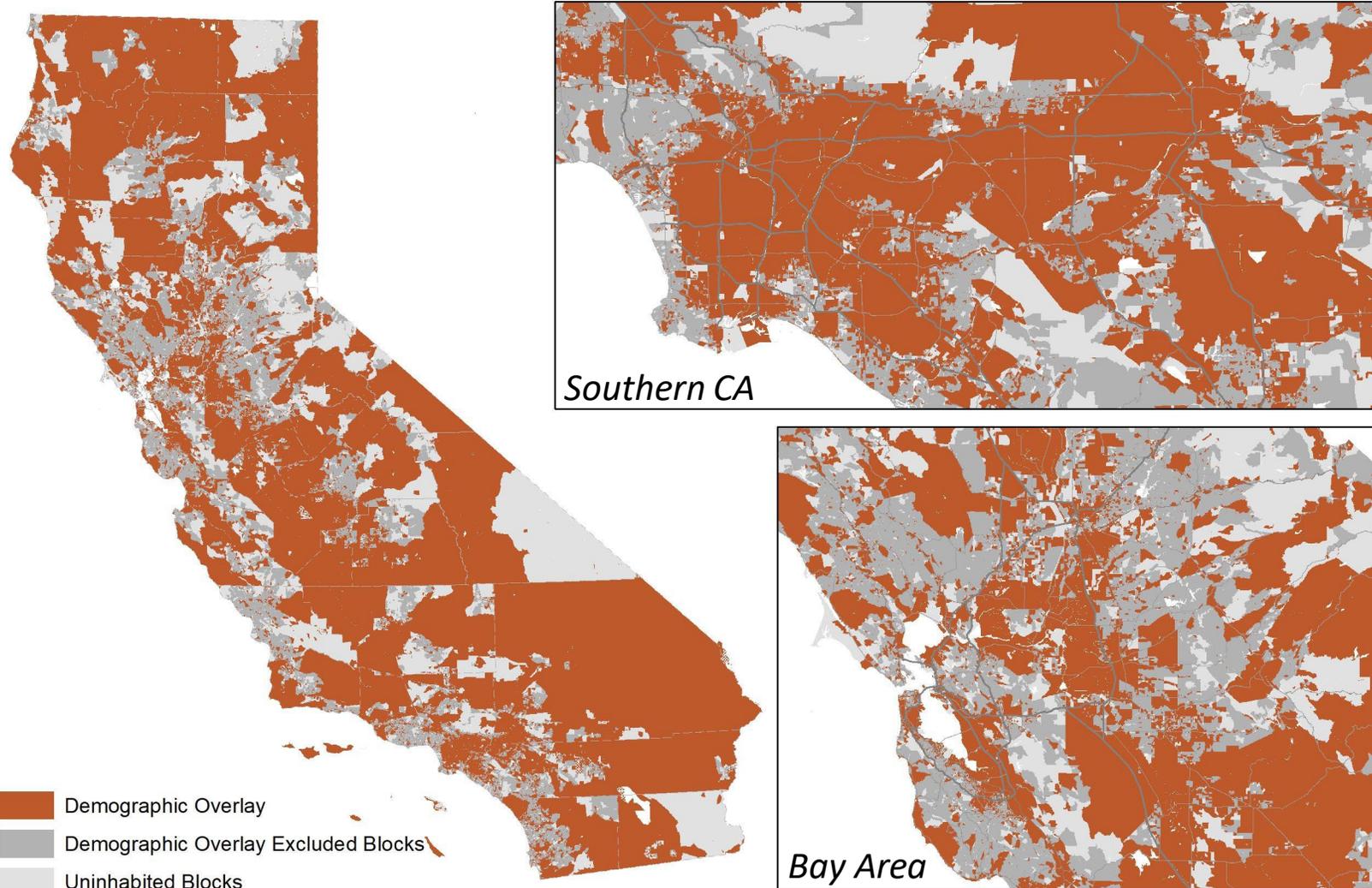
Traffic Proximity and Volume
OR Crash Exposure AND
Access to Destinations



Priority Populations
Screen

Demographic Overlay

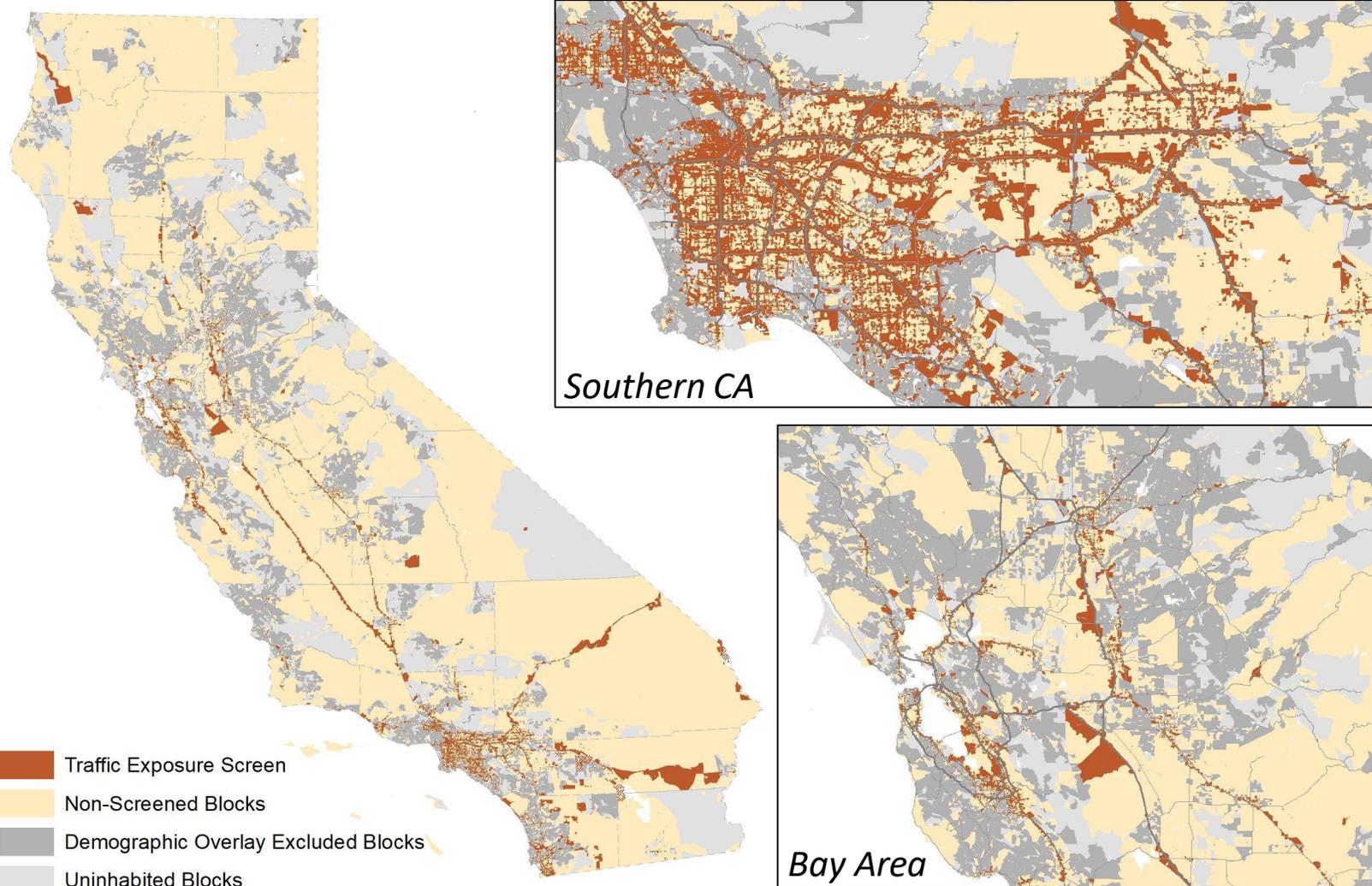
Total Population Coverage: **71%**



Household Income
OR
Race/Ethnicity

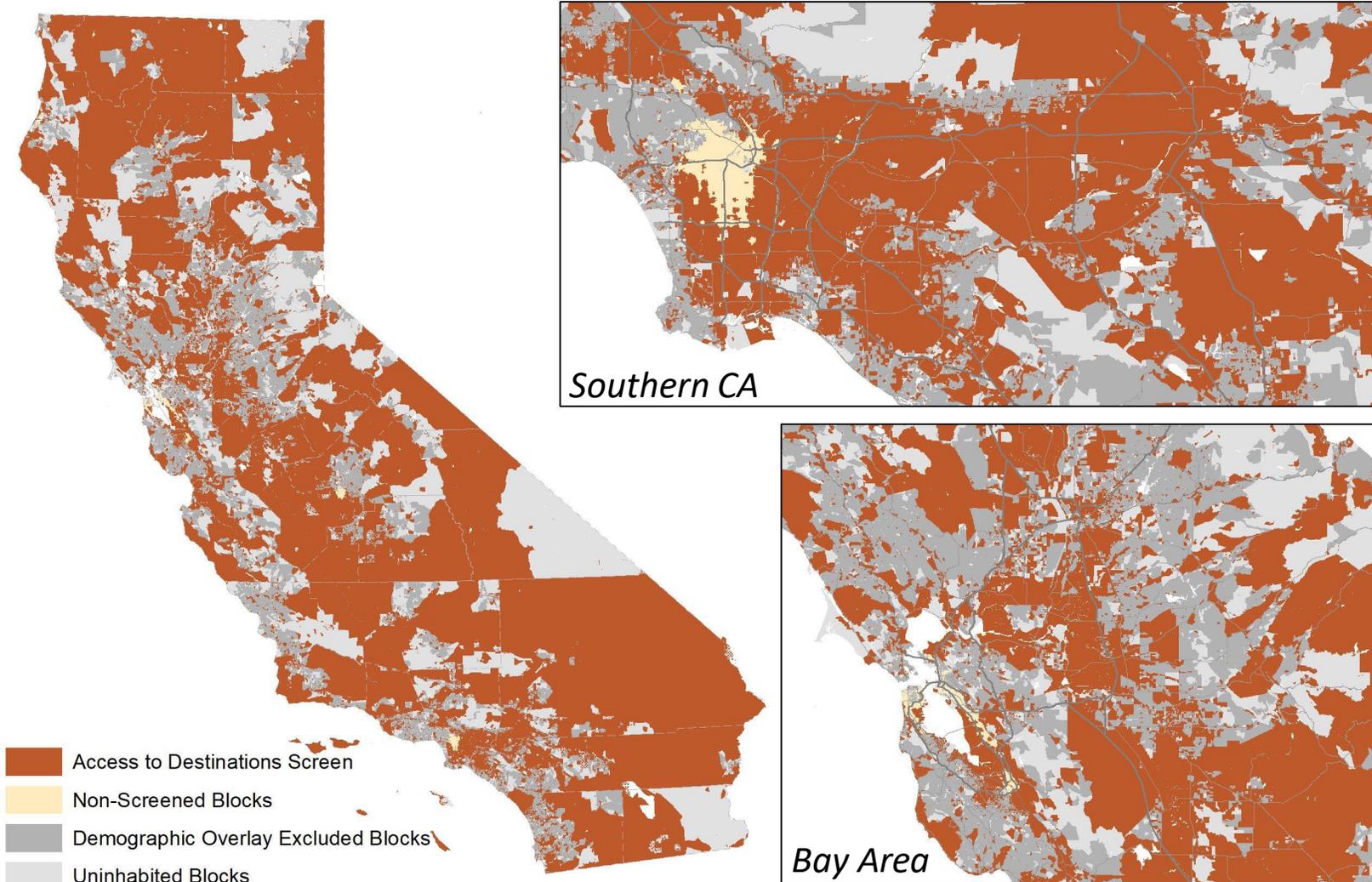
Traffic Exposure Screen

Total Population Coverage: **26%**



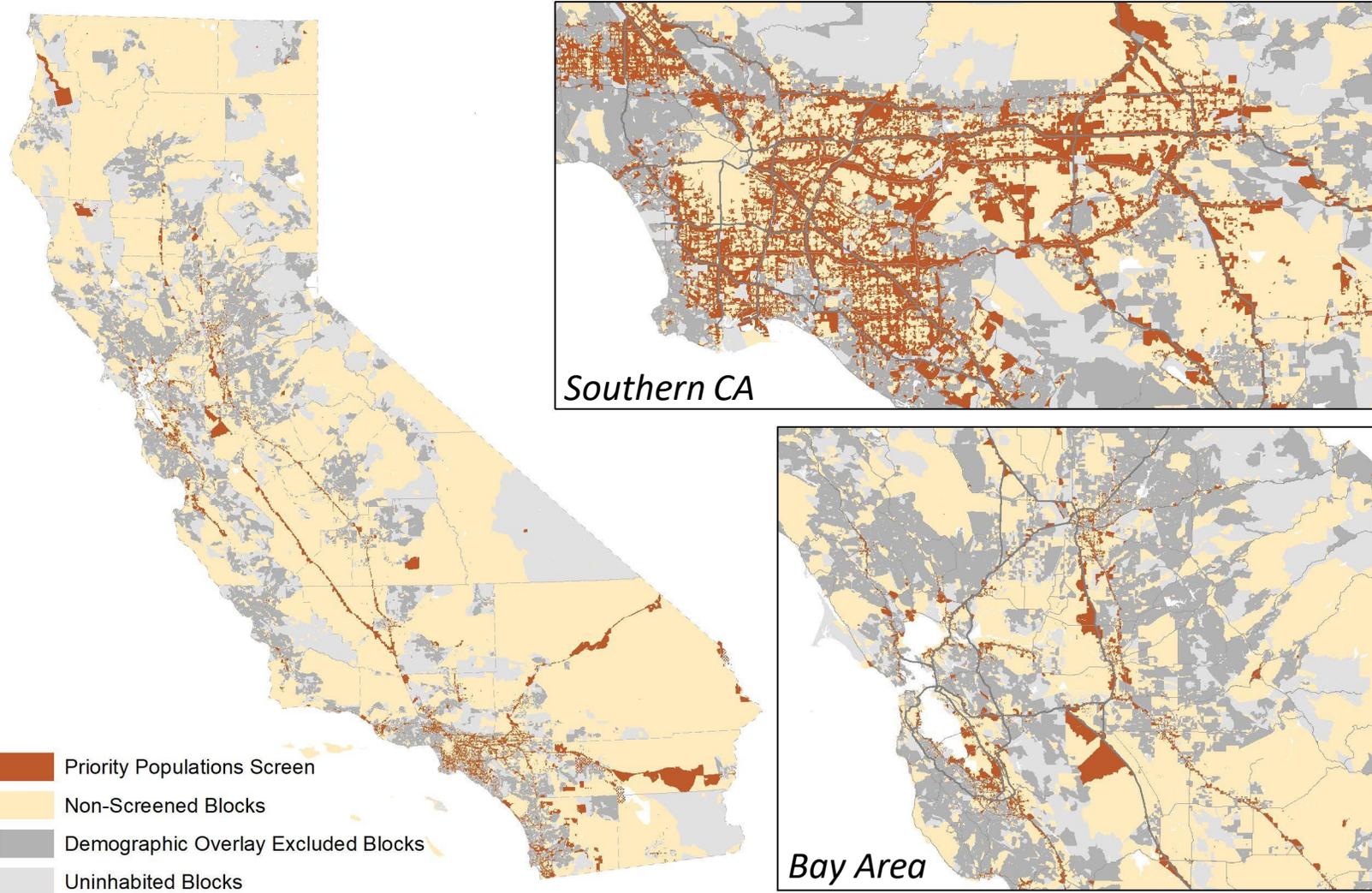
Access to Destinations Screen

Total Population Coverage: **61%**



Priority Populations Screen

Total Population Coverage: **20%**



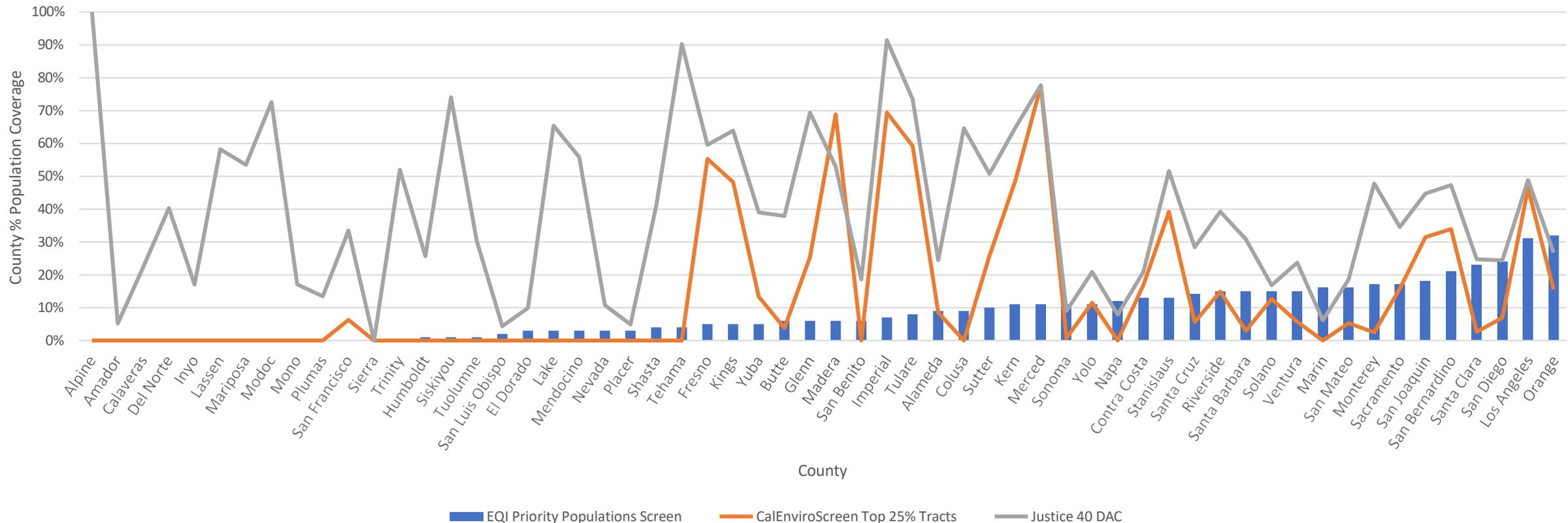


COMPARING EQUITY MAPPING TOOLS

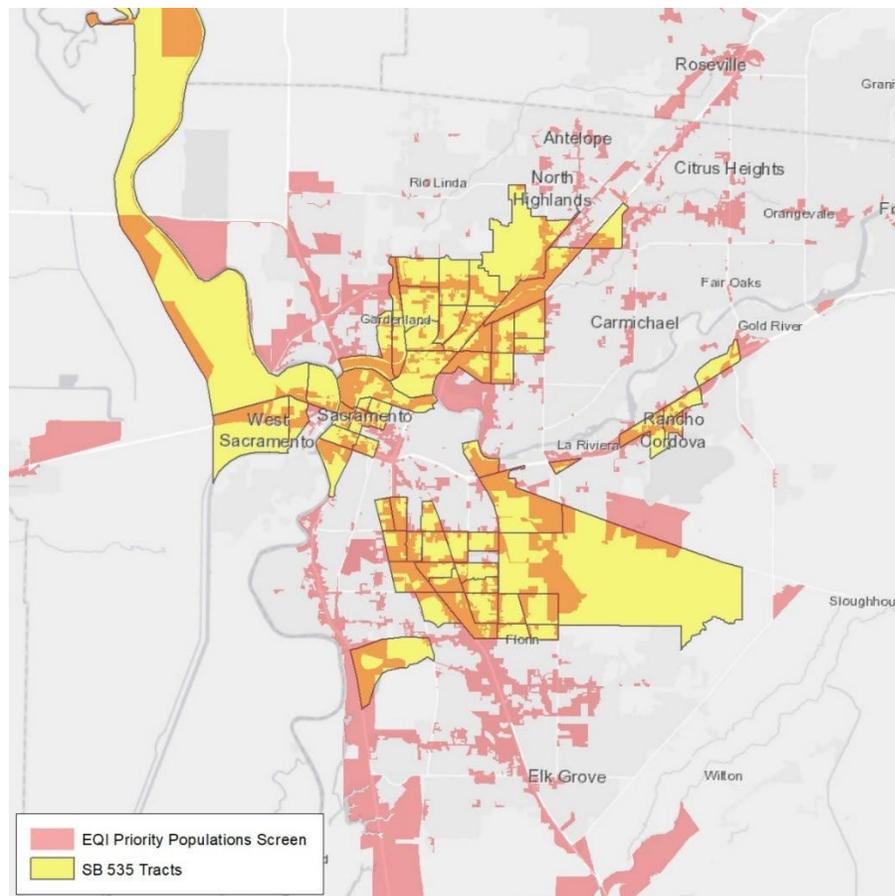
	OEHHA: CalEnviroScreen	CEQ: CEJST (J40)	Caltrans: EQI
Transportation burdens	AADT, diesel exposure	AADT, diesel exposure	Weighted AADT, severe crashes
Transportation benefits	Not included	Time and dollar cost of travel	Non-auto access to work, non-auto access to non-work destinations
Demographics	Age, race, income, housing burden, employment, health, education	Income	Income, race/ethnicity
Unit of analysis	Census tract	Census tract	Census block

COVERAGE COMPARISON OF EQUITY MAPPING TOOLS

Coverage Comparison of Equity Screening Tools



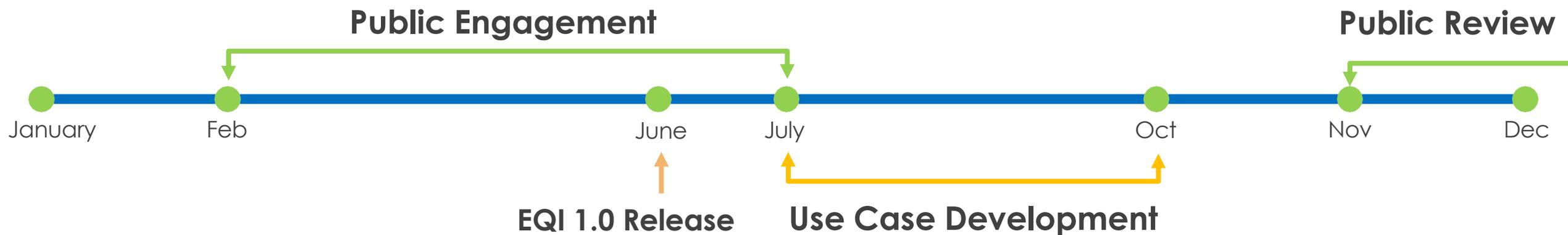
COVERAGE COMPARISON OF EQUITY MAPPING TOOLS



- Granularity of Census blocks
- Difference in project analysis methods

PUBLIC ENGAGEMENT PLAN

Timeline Overview - 2023



PUBLIC ENGAGEMENT PLAN

Information Sessions

- Session #1 – Introduction of beta EQI (purpose and preview)
- Session #2 – Update on beta EQI developments since September 2022 preview
- Session #3 – Discussion of technical and methodological considerations
- Session #4 – Presentation of draft use case scenarios
- Session #5 – Solicitation of input and questions on use cases



PUBLIC ENGAGEMENT PLAN

Target Audiences

- State Agencies/Transportation Agencies
- Tribal Governments
- Transportation Industry and Labor Groups
- Environmental Justice Partners
- NGOs and CBOs
- Research Centers and Institutes

PUBLIC ENGAGEMENT PLAN

Approach

- Information sessions
- Targeted audience listening sessions
 - Standing meetings
 - New convenings
- Interagency briefings



QUESTIONS?

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For more information:

[EQI Web Map](#) | [EQI Website](#) | CaltransEQI@dot.ca.gov